National Cave and Karst Research Institute
Workshop Notes
October 5-6, 2003

Ground Rules

- Contribute to the success of the meeting
- Think possibilities and opportunities
- Strive for collaboration and cooperation
- Bring perspectives, not positions
- Listen to learn, not rebut
- Question to clarify, not to corner
- Enjoy your setting and time to think together

Day 1

Based on the missions of other organizations, what do you see as gaps and opportunities for NCKRI?

- Bring funding needs to the public's attention
- Catalyst for bringing together cave and karst researchers and other related disciplines
- Strengthen private relationships
- Bring volunteer issues/opportunities to the table
- Education! Education!
- Larger scale perspectives (international, national, regional)
- Assessment, status, and trends of caves and karst…a National Report Card
- Exploration
- Protocol dissemination and implementation
- Research Catalog of national needs and issues
- Undergraduate research to put scientists into the pipeline
- Education to visitors to state parks to include implications beyond the borders of the parks
- Impacts of visitor use on caves
- Field laboratory for resource management practices
- Guidance to EPA for rules and regulations
- Endangered species

- Bring together Tier 1 universities
- Cohesive information on cave management
- Link "information systems," both formal and informal, and respond to inquiries (lead to establishing priorities)
- National Cave Association outreach to the private owners
- Link to international literature
- Collections
  - Archiving
  - Preservation
  - Data
  - Physical collections

Core Purpose

Promoting understanding and protection of cave and karst systems

Core Values

- Science-based stewardship
- Objective science
- Education
- Shared decision-making
- Benefit all segments of society
- Leadership

Context Map Data

Science Trends:

- Invasive species
- Orphaned collections
- Models (conceptual, digital, etc.)
- Satellite imaging
- Abandoning basic taxonomy
- Not enough taxonomists to identify/describe cave critters
- Liaison with international organizations and labs
- Pharmacology
- Environmental change
- Understanding phreatic karst
- Need for applied cave and karst research that is prioritized and advertised to the academic community

- Interdisciplinary and integrated science (3)
- Extending time base for understanding processes and trends—temporal scales
- Regional, national, and international integration
- Most exciting research taking place at interfaces
- Application of new technology (e.g., molecular biology)—not being used to test hypothesis
- Economic mineralization
- Age of researchers
- Biodiversity mapping
- Biodiversity prospecting
- Increased costs of doing science
- Understanding porosity/permeability

Technology Trends:

- Videoconferencing
- Distance Learning
- Language translation facilities
- WEB
- GIS
- Electronic mapping
- Digital cameras
- Digital models
- Virtual journeys
- Monitoring techniques and equipment
- Automatic sampling
- Cave lighting technology
- Impact controls
- Electronic availability of publications and databases
- Database management
- Virtual libraries
- Indices of information (electronic) or keyword document searching
- Geophysical exploration tools
- Non-invasive technologies for sampling and analysis
- Innovative sensor technologies
- Robotics

Political Factors:

- GPRA Performance requirements
- DOI pressure to work with sister agencies
- FACA requirements for Board/Committee membership
- Outsourcing
- National security issues
- Karst aquifer water issues
- Planning at watershed level
- Transfer of agricultural karst regions to vibon/subvibon environments
- N.I.M.B.Y.
- Leveraging resources and partnerships
- Partnering at the local level
- Cooperating with the international cave and karst community—an exchange of science information on an international scale
- Image building
- Citizen-controlled government—how does this fit in?
- Devolution of responsibilities to states
- New Mexico and Carlsbad expect certain results
- Secrecy ethic among some groups

Economic Climate:

- "Stinks" at national and state levels
- Declining budgets
- Competition between interest groups
- Pressure to develop domestic oil and gas energy resources
- Unemployment

Customer Needs/Wants:

- Marketing and outreach to other conservation and science organizations
- Hot topic digests for management, education, and science
- Publishing venue
- Collection standards and accessibility
- Research collection
- Research venue
- Grants
- One stop shopping for cave and karst information

- Integrated library
- Genetic and biology repository and databases
- Data repository
- Data access
- Water supply
- Models for influencing state curricula
- Education
- Geological hazard information
- Groundwater protection
- Bait for tourism
- Economic development
- Clearinghouse for research, education and land management—push vs. pull, hot topics
- Resource management prescriptions

Funding Trends:

- Large consortia funding
- Multi-agency consortiums
- States as a source through Mapping Act
- Matching funds
- Accountability
- Donor expectation to track dollars given ("unrestricted" going away)
- Competition for limited funds—many other needs
- Lack of awareness of caves and karst with major funding agencies
- Philanthropy works—charity is unlikely
- Expected influence "bought" by non-federal funds
- Increased awareness and funding of karst research by various federal agencies
- Needs-based
- Don't compete with private nonprofits, instead create matching incentives to build partnerships and get more bang for the buck (e.g., non-point source program is a good example)
- Homeland security is a source of funds
- Fees
- Volunteers and in-kind
- Education funding follows state/national Standards

Uncertainties:

- Human resources—training/"capturing" the next generation
- Changing demographics and social values
- Funding
- Cave protection from vandalism and over exploitation
- Protocols—appropriate standards for I & M
- Customers

Bold Step Areas

Outreach:

- Congress a major customer with strategy needed
- Non-feds need to form alliances to gain support for NCKRI

Marketing:

Research:

- Leopold model
  - Some research defined by an agenda
  - Facilitate research of others
- Grant programs
- Interdisciplinary agenda
- Work published by NCKRI—determine whose work
- Support science-based publications
- Clearinghouse for basic research
- Apply basic research
- Strive for a large consortium working on BIG science
- National Research Catalog (e.g., problems in search of researchers… set priorities)
- Sponsor and host meetings and workshops in collaboration with other entities
- Economy of scale problem solving
- Focus: basic research plus cutting edge, specific management problems, targeted research
- Utilize volunteers (doing a good job already)
- Collect information that may not rise to the level of publication (e.g., classroom or citizen monitoring programs, undergraduate student research projects)

- System level
- Sabbatical/Fellowship/Visiting scientist support
- Applied research
  - Solve a problem
- Generate vs. Support Research
  - Some of both
  - Avoid competition for research dollars
  - Come to NCKRI to do post docs, visiting scientist
  - Focus center
  - NCAR model
  - NCKRI name associated with work published elsewhere
  - World leader vision will require research
  - Report of all NCKRI results—an Annual Report
  - National Report Card on Status and Trends of Caves and Karst
- Standards for publishing
  - Peer Review
  - Publications guideline
  - Interpret for other audiences and peer review for that
  - Partner with AGI, GSA, etc.
- Identify gaps in publications
  - Partner with volunteer organizations
- Science Digest
- Research holdings
  - Private holdings
  - Research tool
- Standards for conference/meeting support
- Consortium
  - Fee-based
  - Seed base for initial steps to prepare to go for bigger dollars
  - Umbrella not NCAR
  - Ground up to NCKRI
- BIG Science—regional, interdisciplinary scale, cutting edge
- Equipment
  - Federal equipment being surplused
  - Maintenance issues
  - Lease at cost

- Exploration:
  - Research, mapping, surveying, writing
  - Collaborate with NSS

Resource Management:

- Advise public managers and private owners (liability?)
- Inventory standards—what is out there? How to recognize it? Data standards
- Multi-agency representation on staff (Federal cave program coordinator)
- Liaison with government, academia, NGOs
- Develop "Best Management Practices"—standards for cave and karst management
- Transmit Best Practices/Lessons Learned
- Setting/developing priorities for funding based on management needs; then communicate priorities
- Training for managers
- Be a resource for policy makers
- Translate science to managers and other officials/decision makers (e.g., Congress, state legislators)
- Convene meetings/workshops regarding findings and priority topics
- Meetings/Symposia
  - Avoid duplication
  - Cooperate, collaborate, support
  - Strengthen and improve existing conferences
  - Bring in additional organizations to conferences
  - Look for gaps—avoid preaching to the choir
- Promote long-term monitoring standards (Mammoth Cave as prototype)
- Promote cave habitat restoration
- Cave species protection through ecosystem management
- Facilitate finding experts for land management planning
- Manage and assess as a complete system (not just the cave)—regional watersheds
- Recognize impacts of both non-point sources and point sources
- Develop a National Assessment of the Health of Caves and Karst Systems and Trends

- Better documentation of stressors on cave and karst systems (e.g., zoning)
- Include impacts of global change, air quality, ozone, sea-level rise, etc.
- Support cave management symposia
- Develop a Digest of current studies and publications on cave and karst management
- Non-point source
- Philosophies vs. actions
- Global change—global climate change—get beyond the drainage basin
- Advocacy position
  - Take a place at the table
  - No, stick to legislation
  - Sit at the International table
  - Will evolve—keep it on the table
  - Stay with good science
  - Education vs. advocacy
- Grants Program
- Action as well as research
- Education with results spelled out
- Matching with NSS & others
- Partnerships
- Information source
- Portal for grants
- Grant writing help
- Liability
  - Investigate need for insurance

Education:

- Publish as both facilitator and originator of educational materials
- Multi-lingual, multi-format, disability accessible
- Education coordinator
- State Standards advocacy (getting questions about caves and karst into state tests)
- "Train the Trainers" Program
- Project Underground as example
- National curriculum templates—K-12, College in coordination with local educators
- Concrete lesson plans for teachers/student teachers

- Promote advanced degreed in cave and karst related areas
- Alternative delivery modes (virtual, computer, on-line, PBS)
- Web-based and multi-media educational materials
- GeoCorps Program
- Investigate distance learning opportunities
- Enhance interpretive programs
- Field trips to cave and karst areas and show educators and students caves
- Promote Parks as outdoor classrooms
- RUI (undergraduate research) through NSF
- Everyone as a teacher…train realtors to pass along information about caves and karst to new homeowners
- Disseminate what we already have…lots of good material already developed
- Support Congressional Science Fellows…support researchers into the Science Fellows pipeline
- Support and partner with other educational programs
- Provide and provide access to grants for educational programs
- Host cave management symposia, national, regional, and local
- Don't re-invent the wheel; be a clearinghouse for existing tools
- Develop traveling exhibits
- Work with 4-H, BSA, GSA, etc.
- Post docs, internships, thesis support
- Provide short courses for industry, college faculty, realtors; present at their professional meetings
- Develop programs for interpreters (training, materials)
- Interpretive material
    - Cave owners/cave managers
    - Evaluate and consult on interpretive programs, carefully handled (help with content and communication)
    - Translations for interpretive programs for foreign visitors
    - NAI model
    - Education Center models (e.g., CARHART, Outward Bound, Project Learning Tree)
    - Encourage new people to enter the interpretive field
    - Leverage what is being done—share lessons learned/best practices
    - Environmental education land ethics piece

- Standards for support
- Have criteria and communicate it

Data and Information Management:

- Physical library (librarian, staff, archived materials)
- Virtual library (indexing, keyword search of collections)
- Facilitate access vs. traditional library model
- Librarian as information coordinator
- Clearinghouse for distributed databases; Web portal
- Release of confidential/controversial data policies to control data and myths
- No new journal—maybe a printed, quarterly digest for management and education
- Directory of who to call for cave and karst information and referrals to other organizations
- QAQC for web, digital, other publishing
- Support for and standards for other collections
- Annual report of NCKRI science and grant status
- Collections—museum curator
- Taxonomist specialists (source list/directory)
- Centralized location for data on projects
- Biological repository (living culture collection, genetic data base, SEM/TEM image base, biological observations)
- Lists of thesis and dissertations
- Determine NCKRI uniqueness/distinctives
- Contract for cataloging
- Electronic databases available electronically
- Access to International data & information
  - Translation
  - Names

Day 2
Overnight Ah-has

- Customer assessment, e.g., Congress – Build alliances for advocacy
- Institute vs. other Organizations
  - Intellectual property, not management
- Priority setting

Organizational Structure

Joint Administration:

Decision Making Body

Stakeholders:

- Fair sharing of input
- Voice for volunteers

Act Mandate:

- Indirect control for NPS
- Ultimate responsibility for NPS
- Program administration for academic partner(s)

Day-to-Day Administration:

- Fiscal administration
- Scheduling
- Direction from BOD

Direction of the Institute:

- BOD – Fed, non-Fed, NGOs
  - Strategic direction
  - Avoid FACA

Funding

- When are matching fund commitments needed?
- Can matching credit be carried over?
- State Agencies, e.g., State Geologists, State Parks, etc.
- State money comes first
- Fed money through appropriations
- NM delegation will go after more money to go forward
- State money is secure
- Grants and fees (courses, products, services)

- Leverage funding opportunities with private sector
- CCI funding sources
- Need mechanism to accept donations (50/C3 or C6)
- Build a coalition of legislators
- Build a coalition to go to the state and Congressional legislatures
  - Groups to approach for assistance – Need a coherent strategy and communication pieces
    -- CRF
    -- NCA
    -- API
    -- BCI
    -- TNC
    -- AASG
    -- NSS
    -- AGI
    -- University lobbyists
    -- Educational entities (NSTA)
    -- Cities near caves, League of Cities

<u>Communication Strategy</u>

Audiences:

- Cave Management Symposium
- Membership
- Local Governments
  - Councils of Government
  - County planning officials
  - State planning groups
- Federal Agency managers
- State Parks Association
- State geologists
- National State Teachers Association
- National Heritage Programs
- State DNRs
- Other Universities with programs
- ASM
- AAAs
- ESA

- ASLO
- Fed Publications (e.g., People, Land and Water)
- Media contacts

Building Implications

Insurance:

- 2 stories
- 20,000 square feet
- Flood plain

Lab:

- Storage
- With observation/interaction areas with visitors
- Prep areas
- Loading doc
- Hazardous chemicals

Offices:

- Main Room
- Reception Admin

Classrooms/Meeting Rooms/Distance Learning facility
Kitchen & Shower & Restrooms
Science/Study Collections
Library (3000 – 5000 sq. ft.)
Facility Meeting Area
Computer Lab
Visitor Center/Museum – 5000 sq. ft. Gift Shop included in the 5000 sq. ft.?
Storage

Parting Shots

- Manager for Web & Graphic design needed
- Great set of people!
- Call for additional thoughts
- Working group reinforced and added to
- Federal budget is "like how sausages are made"